DOCUMENT RESUME

ED 151 038 JC 780 126

AUTHOR Berry, James J.
TITLE Instructional Methods at the Community College: 1970-1977.
PUB DATE 78
NOTE 32p.

EDRS PRICE MF-$0.83 HC-$2.06 Plus Postage.
DESCRIPTORS Affective Behavior; *Bibliographies; College Instruction; Community Colleges; Comparative Analysis; Computer Assisted Instruction; Educational Research; Individualized Instruction; *Junior Colleges; *Literature Reviews; Models; Multimedia Instruction; Peer Teaching; Student Teacher Relationship; *Teaching Methods; Tutoring

ABSTRACT

A review of research on instructional methods at community colleges since 1970 is presented. Studies of individualized instruction, programmed instruction and computer application, media approaches, affective approaches, student-faculty interaction and learning outcomes, and peer tutoring are discussed. Positive impacts of the various methods are reported; however, only a small percentage of the literature is said to deal with instruction and much of this lacks empirical data. It is concluded that change is developmental and a consequence of such interacting factors as instructor, instructional arrangement, and student's personality and prior educational experience; that a diversity of instructional approaches should be used in community colleges; that a set of basic categories should be constructed to aid instructors in deciding what instructional methods to adopt; and that a basic instructional model should be designed. It is felt that the basic model should involve clearly articulated objectives, course content broken-up into relatively small information task units, task units arranged in sequence to maintain course continuity, supports within task units to predispose success in dealing with presented information, frequent feedback on performance, and review tests to clarify how course objectives can be met. An extensive bibliography is appended. (TR)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED151038

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

James J. Berry

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC) AND USERS OF THE ERIC SYSTEM."

U S DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY

INSTRUCTIONAL METHODS AT THE COMMUNITY COLLEGE: 1970 - 1977

James J. Berry

1978

JC 780 126

Abstract

The community college is a teaching institution. Board members, administrative leadership, and faculty need to address themselves to careful planning and committment to the development of quality instruction programs that meet the needs of people, if the community college is to be the "peoples colleges" in reality and not symbolic words on paper. Methods of instruction reviewed include: individualized instruction, programmed instruction and computors, media-approaches, affective approaches, and student faculty interaction and learning outcomes. The data base used is empirical studies of instruction at community colleges since 1970. Implications from the reivew of the literature includes:

1. Change is developmental and multi-dimensional.
2. A basic set of categories is needed in instructional research.
3. A basic instructional model is needed.
4. At the community college, a diversity of instructional approaches must exist.

A bibliography of eighty articles is included.

Methods of Instruction

A review of the literature as it relates to instruction is justified since empirical study of instruction has been down-played in the community college literature and the common assumption is made that, there is no difference in the impact of instruction on students.

A bibliography of articles in the Junior College Journal, covering 37 years between 1930-1967, included only 67 articles under the heading of "methods of teaching". In the mid 1960's B. Lamar Johnson (1964, p. 13) wrote the following: "The general picture revealed in the survey is one of significantly less experimentation than would be expected, or certainly hoped for, in an institution which is often referred to as 'the most dynamic unit of American education'." In the mid to late 1960's there appears to have been an increase interest in instruction as evident in the titles of articles in the Junior College Journal and in publications such as the UCLA Occasional Report Series. For example:

1961_____

1962_____

1963_____

1964 Islands of Innovation.
New Directions for Instruction.

1965_____

1966_____

1967 Systems Approaches for Instruction.

1969 Focus on Learning.
The Experimental Junior College.

Yet, of the 17 publications in the Jossey-Bass New Directions for Community Colleges, only four directly deal with instruction.

Hammons (1977, pp. xii-xiii) suggests ten factors that inhibit instuctional innovation:

1. The emergence of a "career" faculty.
2. Student receptivity change.
3. Pressures for accountability and productivity.
4. A lack among administrators of knowledge and training on the process of causing, implementing, managing, and evaluating change.
5. The failure to give a high budget priority to items essential for supporting instructional change.
6. The paucity of suitable incentives for faculty experimentation.
7. A deteriorating budget situation.
8. The lack of knowledge among many faculty members about instructional innovation.
9. The insufficient number of qualified consultants to assist in the change process.
10. The climate of mistrust or the adversary relationship that exists on many campuses.

However, in the present writers opinion, Hammons fails to mention that many faculty remember that the "innovations" of the 1960's did not live up to their promise and that an instructional approach that works with a small group of students in a particular subject matter, may not be effective when institutionalized.

A common assumption held is that different instructional methods do not make any difference. Dubin and Taveggia(1968, p. 10) write "The results of our intensive reanalysis of data on comparative college teaching methods make it very clear...that no particular method of college instruction is measurably to be preferred over another, when evaluated by student examination performances". They further write: "With monotonous regularity, we recite the results below. Face-to-face with their instructors, or independent of them, college students can pass their course examinations with equal facility and level of performance". (Dubin and Taveggia, 1968, p. 33) For administrators, they wrote: "Whether the academic

likes it or not, and since he is usually an ex-college professor he will not like it, these academic decision-makers are going to be faced with the need for applying cost-benefit analysis to instructional costs. It is reasonable to expect that if there are no measurable differences in content learning among various teaching methods that the least costly will be adopted". (Dubin and Taveggia, 1968, p. 50)

In 1977 the "state of the art" is not the same as suggested by Dubin and Taveggia (1968). For example, Robin (1976) in his extensive review of behavioral instruction (The Keller Plan, The Ferster Plan, Performance Session, Group Remediation, Lloyd's Contingency Management) found that "30 of 39 comparisons resulted in significant differences in favor of behavioral instruction...In only a single instance did a lecture-discussion condition produce superior performance..." (p. 320) One should note, that these studies were concucted at senior institutions. Also, in response to the Dubin and Taveggia (1968), McKeachie (1971, p. 7) writes: "When one asks,...whether knowledge; (1) is remembered after the final examination, (2) can be applied to new problems, or (3) is related to attitudes and motives, we find that class size and teaching method do make a difference..."

This present review of instruction will restrict itself to studies at community colleges and restrict itself to studies done in the 1970's. The reason for restricting the review to the present decade is that in terms of research, much of what is found, is valid only for a given culture, at a given time. This writer suspects that investigators need to establish continuity in research that would enable one to spot trends in student learning and relate changes in student responses to differing instructional methods to changes in the elementary and high schools, changes in child rearing practices, etc... In other words, what worked 15 years ago, may not work today.

Individualized Instruction

The term individualized instruction (II) is a broad term that refers to methods of instruction such as a Keller's Personalized System of Instruction (PSI)

and Bloom's (1968) Mastery Learning (ML). (The term II has appeared, in the writer's opinion, to replace the 1960's term "system approach". Furthermore, the ERIC Thesaurus did not add the descriptor ML until Dec. 1976)

Keller's PSI, developed as an outgrowth of the "operant conditioning" approach of B. F. Skinner. Features of PSI include the following:

1. Self-pacing.
2. Unit-perfection requirement for advancement.
3. The use of lectures and demonstrations as vehicles of motivation, rather than sources of information.
4. Stress upon the written word in teacher-student communication.
5. The use of proctors.

On the otherhand, Bloom's Ml was developed in the elementary school setting. Bloom (1968, p. 8) writes: "Our approach has been to supplement regular group instruction by using diagnostic procedures and alternative instruction methods and materials in such a way as to bring a large proportion of the students to a predetermined standard of achievement". His basic assumption, which this writer questions, is that most students, perhaps over 90 percent, can master the subject under consideration. Bloom's thesis is that, to promote ML, five varibles must be dealt with effectively, these are:

1. Aptitude for kinds of learning, viewed as the amount of time required by the learner to attain mastery of the task.
2. Quality of instruction, viewed in terms of its approaching the optimum for a given learner.
3. Ability to understand instruction, i.e. to understand the nature of the task and the procedures to follow.
4. Perseverance, the amount of time one is willing to spend learning.
5. Time allowed for learning.

One should note, the PSI differs from ML in terms of the use of student proctors and a corresponding de-emphasis on group instruction.

Essential assumptions of II according to Cross (1976, pp. 52-53) include the following:

1. The student is active rather than passive.
2. The goals of learning must be clear and must be made explicit to the students.
3. Small lesson units (frequently referred to as learning modules) dealing with a single concept.
4. Learning requires feedback and evaluation.
5. Recognising the enormous individual differences in the rate of learning...approaches to individualized instruction feature self-pacing.

While some critics argue that II or ML approaches are cold and impersonal, Rouche (1975) suggests that ML is humane because it allows for individual differences, emphasizes each students ability to master the course content, and provides the opportunity for honest and open communication between students and instructors.

II has been used in various subject areas including Accounting (Elliot and Tuckman, 1976), Algebra (Sheldon and Miller, 1973), Calculus (Blough, n.d.), Chemistry (Schaumburg, 1973), Civil engineering (Sharples, 1976), Criminal evidence (Hinrichsen, 1975), Drama (Diaburri, 1975) Electrical curcuits (Taber, 1974A 1974B), English (Sheldon and Miller, 1973), Social science (Magidson, 1975A), Sociology (Higgins and Laplante, 1974) and Physical science (Decker, 1974). One should note, that reported II studies tend to come from subject areas where structure and quantification exists.

Hinrichsen (1975) compared PSI with traditional lecture methods in an introductory police science course. In terms of enrollment counts, more students selected the lecture sections rather than the PSI sections. Significantly higher percentages of PSI students achieved A and B grades. However, the withdrawal rates were higher in the PSI sections. (These students may be those who earn lower grades in the lecture sections.) Two other recent PSI studies are reported by Taber (1974A, 1974B). She found that, a higher proportion of the PSI students passed the introductory course in engineering technology. In addition, PSI

students scored significantly higher on the final exam and performed as well in the subsequent courses in the series. Also, she reports that about 90 percent of the students indicated that they preferred the PSI approach.

In the ML approach, a pilot project is reported by Madgidson (1975). The author assisted a faculty member in developing a II module for a social science course. Although the student achievement did not meet the instructor's expectations, 80 percent of the students rated highly their enjoyment of the learning experience. In another pilot project, Burger (1975) used ML in a third quarter chemistry course and found that 90 percent of the students mastered the course objectives and the students gave "very positive" course evaluations. Also, the error rate data indicated necessity for revision of instruction for 5 of the 20 objectives which required, on the average more than two attempts to master.

Ciaburri (1975) in the subject area of drama, compared traditional lecture-discussion with II as prescribed by performance objectives written by the students themselves. Scores on the post-test revealed no significant differences between the two instructional methods. However, it was noted that greater depth of knowledge and greater effort was self-imposed by experimental group students through self-designed projects.

On the otherhand, a study by Elliot and Tuckman (1976) illustrates the importance of looking at differentiated outcomes when comparing II with traditional instruction. The researchers used accounting students and compared II with traditional lecture-discussion instruction. They found no significant difference in terms of achievement test scores between the two methods. However, the efficiency of II was shown, as students in II required less study time than those in the traditional system without decreasing achievement and in transfer problem solving, II students manifested significantly more search initiative, spent more time in problem solving, and had more correct solutions than those traditionally taught. Elliot and Tuckman (1976, p. 11) write: "It is recommended that all studies comparing the two instructional approaches (II and lecture-discussion)

be guided by the differentiated-outcome hypothesis in-so-far-as they measure at least three categories of outcome: (1) the acquisition of knowledge-as typically measured by an achievement test; (2) the development of problem-solving skills, which unfortunately standard measures are lacking; and (3) affective gains, typically attitudes toward school and toward self. If the differentiated-outcome hypothesis is valid, more flexible, student-centered approaches will tend to distinguish themselves, if successful, in problem-solving and affective areas."

In terms of planning, Sharples et al (1976A) describes the procedures involved in developing a comprehensive II program. Faculty members in ten institutions, in the state of South Carolina, which offer a civil engineering technology program formed a committee to assess the needs of their students. The group suggested eleven courses which they felt should be included, identified course objectives, and compiled a list of 163 competencies to be required of graduates of the program. Faculty members were then hired to write the individual courses, with the help of consultants from the University. In addition, each course was validated by field testing after it was completed.

Jones et al (1975) report on the use of ML at Olive-Harvey College, one of the eight City Colleges of Chicago, which closely followed Bloom's (1968) format. Courses used in the study were economics, biology, social science, business, english, mathematics, spanish, humanities, and chemistry. With the exception of only one class, ML was associated with improvement in achievement. In classes where a common final exam was administered to ML and traditional instructional groups, the mean difference in achievement was significantly in favor of ML students at levels of significance form .001 to .05. In terms of attrition, the rate of withdrawal in ML sections was 36.9 percent as compared to 37.5 percent overall for the same courses under traditional instructional conditions.. As for affective characteristics, at semester's end ML students rated themselves higher

in self-concept and showed greater positive change in their self-concept of general academic ability. (This finding was significant at the .01 level.)

In terms of technical problems, Jones et al (1975, p. 41) openly writes: "we often find the essential or best sequential arrangement difficult to discover. In some disciplines, sequence often seems quite irrelevant or insignificant in relation to the objectives established. We have also found,...that a gradual increase in achievement level often does not occur as the course develops. The hoped for cummulative effect of mastering formative exams is frequently not apparent...we often discover that the items included in our summative exams do not correspond well either with the items in the formative exams or with the instructional time devoted to particular objectives."

Other recent studies and reports on II have been done by Baughin (1975), a case study; Henderson (1976), with reading; Kindschi (1974), a pilot study; Mincks (1976), on the history of II; Sharples et al (1976B), with civil engineering; Woodbury (1976), in using II to teach the Bayesian Theorem.

In general, II seems to provide conditions for learning, in which students may develop academic skills and a positive attitude toward learning. II approaches which emphasis mastery seems to provide as a basis for subsequent learning, permits achievement of success by students, and would appear not to lead to lowering of standards.

Programmed Instruction and Computers

In the 1960's there was much "sound and fury" about programmed instruction. The effort in writing programs turned out far more difficult and time-consumming than most prople realized. However, a legacy of programmed instruction is that it sharpens one's perception about the learning process.

Raines (1974) used a programmed text, along with short discussion periods, and one-to-one student-teacher interaction in mathematics. He found that although

the programmed text did not prove a cure for the problems of basic mathematics, it was found to be an equally effective learning device as lecture, and one which offered the instructor more flexibility in designing learning activities.

A more used legacy of programmed instruction is found in computer-assisted instruction (CAI). Bristol Community College, in Massachusetts, has surveyed the use of CAI. On the basis of survey responses, Desmarais et al (1974) selected eight institutions for site visits. Their report indicates that CAI programs are available for simulation, problem solving, drill and practice, and tutorials. Adams et al (1975), of the Peralta Community College District, reported that in their survey of various educational delivery systems used by other districts, that CAI ranked best on the basis of its relative low cost, high versatility, and low "perturbation" factors. Zimmer (1976) uses case reports from instructors who participated in the National Science Foundation's community college field test of PLATO - a computer-based system developed at the University of Illinois. In addition, Cubert and Masi (1975) found that the use of CAI "frees teachers" to devote time to other useful instructional tasks.

A useful application of computer technology is found in a report by Kelly and Anandam (1976) from Miami-Dade Community College. Their application is referred to as Response System Variable Prescription (RSVP). The system has three fuctions:

1. Maintain a record on each student in a course, including name, address, phone, personal attributes, and exam or survey responses.
2. Print reports to students which include scores on surveys and exams, a diagnosis of individual student problems based on survey or exam performances, and a prescription of appropriate, personalized assignments.
3. Provide the instructor with reports, including statistics on survey's and exams, and a class roster.

According to Kelly and Anandam (1976) the RSVP consists of eight programs with different job assignments to help the system execute these three functions and

can manage up to 5,000 students in a single course, regardless of class format. Also home based students as well as on campus may participate in the system. For each module in the RSVP program, the student takes a ten-item multiple choice survey. RSVP analyzes the pattern of responses and identifies for the student whether he/she missed a "main idea" or a question. Then, the student can be directed to certain portions of a television documentary, pages in a textbook, or sections of a learning module.

In the present writer's opinion, from surveying the literature, the computer appears to still be an under-utilized instructional resource. The reason for this appears to be that computer technology is expensive, not only financially, but in terms of the time and effort of subject-matter specialists who must be involved in some degree. It is, none-the-less in the writer's opinion, an exciting medium for community college education since, in time, it will give students a powerful tool for learning. (Computers interact with each student by responding differentially to his/her input; by providing drill and practice in precisely the areas where the student displays weaknesses; by responding in complex ways to a student's decisions, as in problem solving, hypothesis testing, and in formation processing and by performing a thorough and relentless information retrieval function.) In addition computer technology would change the "boundries" of the campus.

The domain of computer assisted learning needs to be viewed broadly. The program committee of the National Association of Users of Computer Aids to Learning used the following topical headings in 1977: learning about the computer; learning through the computer (drill and practice, diagnostic testing, and tutorial); learning with the computer (simulation, problem solving, creative activities) learning support systems (computer manage instruction, information management, and guidance). In this terminology, computer manage learning translates into "learning support systems.

Media-Approaches

The techniques reviewed in this section include "audio-tutorial", "films", "educational-TV", etc. One should note that these methods emphasize presentation of information. These approaches may or may not be incorporated with II, PSI, or ML approaches. Despite the availability of cartridge-loading projectors, video-tape recorders and television, the black-board (or green board) appears still the most popular visual aid in college teaching. However, media does give the instructor greater flexibility in presentation information. Media also makes it possible for the instructor to allow the student some degree of control over the pace of learning.

Unfortunately, in the writers opinion, audio-visual technology has not emphasized or shown much concern with the specific conditions that influence how a student perceives the visual image and how it helps the student learn. For example, a common notion has been that the greater the number of senses involved in receiving information, the better will be the learning be the student. However, basic laboratory research (Travers, 1977) suggests that the brain can handle information from only one sourse at a time. This means that the human is essentially a "Single Channel System", but one that is able to switch rapidly back and forth from one channel (eye) to another (ear). Also, interference rather than summation may occur if the information from one source (what we read) is irrelevant to another (what we hear or see).

It appears, that "high fidelity" in the visual image is less important than its specific relevance to a specific instructional objective. Thus, novel, colorful, magnified, or moving images do not in themselves make it easier for a student to understand a concept. A free-hand drawing on a blackboard or a teacher-made film can have more instructional value than a drawing or film made proffessionally. The important factor is relevance.

A study by Belzer (1976) demonstrates that multi-media appraches are not a cure-all. He compared the effects of a group-paced, multi-media, non-lecture method and a traditional lecture method of instruction in General Biology. There were 308 students enrolled in General Biology during the academic year 1975-1976 included in the study. Experimental classes (n-152) received instruction via audio-visual materials while the control classes (n-156) were taught by lecture. He found that the lecture method of instruction produced the highest degree of academic success and lowest rate of attrition. On the other hand, Beets (1972) describes a successful auto-tutorial course in General Biology that was combined with the ML approach.

Hoffman (1974) compared the impact of team-teaching and audio-taped lectures with traditional lecture method in medical-surgical nursing classes. The team-teaching approach with audio-taped lectures scored significantly higher on the National League for Nursing tests for Medical-Surgical Nursing II. As a residual finding, when a questionaire was sent to all the graduates who had been in the experimental group, 83 percent of the respondants stated that they preferred the team-teaching approach with audio-taped lectures.

Parsons (1976) presents a case study on a multimedia system at Hagerstown Junior College. The system is a modularized, audio-tutorial, contractual (MATC) system of instruction. Each module is composed of performance objectives, varied means of achieving these aims, evaluation measures that are criterion-referenced to the objectives, and a time parameter. The other two componets of the system are a audio-tutorial system and contract learning. Parson presents data which suggest that MATC students perform better that those under traditional instruction, also, the withdrawal rate between semesters is about 10 percent.

In the 1960's live television was a highly touted audio-visual device. The supporters of television suggested that with television, an instructor could also

film lecture demonstrations. However, a serious drawback was that interaction between instructor and students was awkward, if it was possible at all. Also, presentations were paced by the person who designs them and could not be varied to suit the level of the students or the purpose of another instructor. VTR has appeared to be more useful since it has many of the capabilities of live instructional television and few of its drawbacks.

In the 1970's, one manifestation of the concept of individualized instruction has been the rediscovery of television as a useful tool. Frazer (1975) studied student attitudes toward a televised child psychology course. A questionaire was developed and administered to students who watched the course at home on cable television and those who individually viewed the course at their own pace in the college Learning Resource Center. Students seemed to favor the flexibility of the televised programs in library to the structured viewing approach of cable television. Failure to complete the course seemed less attributable to course difficulty than to other, outside pressures on the student.

Educational television can be used not only for increasing enrollments, but also for improving the learning experience as a technique for community education. One of the leaders in this area is the Coast Community College District (California). They have conducted very comprehensive needs-assessment surveys. (Coast Community College District, 1974A, 1974B, 1974C, 1974D) The general consensus of the panel discussions they held revealed that some target groups were not well defined at all. The well-defined target populations were minority groups bound together by minority status or by having a substantial number of members who saw themselves as belonging to a minority group. The binding element did not apply as much to the professional and white-collar workers. The women's group turned out to be divided into two subgroups: activists, who were striving for a redefinition of women's role in society and the passivists, who were looking for information that would make their present life-style more

meaningful and more productive. However, the most pervasive need expressed by the panelists was to improve the self-image of group members. An evaluation survey using data obtained over three semsesters of broad-casts (Coast Community College District, 1974E) found that the majority of viewers were caucasian, married women. The strongest reason students gave for taking a television course was to earn credits toward a degree. However, Segalla (1976), a staff member of the district, on the basis of research, concludes that TV has proved useful for teaching basic knowledge, but receives poor marks for teaching cognitive skills requiring more than "Level I" knowledge.

"Instructional Television Progress Report, 1971-1974" (1974) provides evaluative data on the televised courses offered by the Los Angeles Community College District. The courses offered were Art I, Astronomy I, Geography I, Health IO, and Psychology I. The data revealed no significant decrease in enrollments on campus that could be attributed to the TV course. The distribution of grades earned by TV students did not vary significantly from that of the on-campus enrollees in the offered courses.

In this era of Unionization, Chicago City Colleges (1974) in an ERIC document outlines the two-year agreement between the districts board of trustees and the teachers' union coucerning the compensation of instructors for TV teaching.

Probably, one of the most overlooked media is that of radio. Houston and Ryg (1975) developed a questionaire and administered to students who had enrolled in the college's five instructional radio courses. They found that over 80 percent of the respondents enrolled in the courses to earn a certificate, diploma, or associate or higher degree. The students gave the courses high ratings. About 25 percent of the students supplemented the radio course by utilizing the college's learning laboratory to listen to the programs. The recommendations of the report include better coordination of course offerings and a more efficient method of

selecting courses and instructors. In a somewhat related report, the Los Angeles Community College District (1973) developed a plan for an educational telephone network. The report argues that an educational telephone network is representative of a media-oriented delivery system which may be utilized in place of traditional classroom instruction.

Affective Approaches

If the three primary areas with which curriculum must deal with are ideas, things and people, then affective instructional approaches need to be included as part of the instruction at a community college. In other words, there is a place for laboratory education (T-groups of human relations education) since this is the most direct approach to learning about people. However, this writer is not suggesting that academic classes-(that is classes that deal with ideas of thing)-be turned into T-group's, etc..., since the work of an academic class is learning about ideas or things.

One should note, that some supporters of laboratory education (Cross, 1976) seem to over emphasize it as a vehicle for personal growth. Too often, in the present writers opinion, the student shows up to attend classes but finds little time, at home, to study. There are no peers to interact with, during meals or at night, no encouragement or lack of opportunity due to other responsibilities to participate in extracurricular activities. In other words, often for the community college student, the primary role is not that of being a student. This problem, in the writers opinion is not resolved by emphasizing laboratory education in all classes, or most classes, or as the central curriculum but the problem should be dealt with by having the faculty have office hours, by having the campus open on weekends, by developing student study groups and by having learning resource areas where students can meet on an informal basis.

Whitehurst and Farnell (n.d.) describe, in this writers opinion, an example of a well-structured laboratory education course. Ninety students in 10 sections were given three hours of academic credit upon successful completion of a personal

growth course. The first 12 sessions were designed primarily to increase the students self-awareness and self-understanding with a minimal focus on producing behavioral change. The last three classes were designed to help the student build a personal growth plan. Each class session began with stated objectives-(this is a good technique for any type of class)-and the students were provided with structured activities. At the end of the course, Whitehurst and Farnell found that scores increased in the students perception of their self-regard, self-acceptance, and time competency.

Reimanis (1973) reports on how laboratory education may be used as an adjunct for student development. The techniques used included weekly "rap" sessions for Economic Opportunity Program students, a short course on achievement motivation training, focus of control counseling, group counseling for high anxiety nursing students, and encounter groups to improve student self-concept. Evaluation data for program participants and controls showed that these efforts in improving student performance and reducing attrition were more effective than purely "remedial" programs in academic areas.

Peer Tutoring

The literature on personality development suggests, next to the family, the most significant factor is the peer group. A common observation is that students can learn from each other. However, the technique peer teaching has not been systematically used. A distinctive characteristic of Keller's (1968) PSI is the use it makes of student proctors.

In the early 1970's, Miami-Dade Junior College (1972) developed a peer teaching program in biology, psychology, social science and reading classes. The peer teachers were expected to assist the students in learning basic skills and supplement the teacher by working individually with students having difficulty. Peer teachers had to demonstrate some skills in the subject and then received a brief orientation to their work. At the completion of the class, peer teachers recieved

grades and a written evaluation. Data suggested that for the most part the program was a success. In another study, Ross (1972), conducted a study within a one-year basic studies program at Tarrant County Junior College, with students in a reading course and the peer tutors were second-semester students and the tutees were first-semester students. She found that over a period of two semesters, the tutees-who became-tutors gained 34 percentiles on the Sequential Test of Educational Progress-Reading and 15 points on the Tennessee Self-Concept Scale. Of importance for policy is the finding that students made better reading and self-concept gains in the role of teacher than in the role of student. Also, students receiving instruction from experienced tutors made slightly better gains than students paired with inexperienced tutors.

Does peer tutoring have long term effects? Carman (n.d.) used peer tutoring with students enrolled in a remedial mathematics course at Santa Barbara City College. He found that significantly fewer students in the tutored groups withdrew from the course and that student attitudes in the tutored groups were significantly more positive toward both mathematics and all other courses. More importantly, the pattern of increased persistence and positive attitude of the tutored group continued during two years following tutoring.

As for development of peer tutors, Maloney (1976) used 16 Reading Tutor Videotapes, developed by a reading instructor to train student tutors in the administration of diagnostic reading tests and in the use of prescribed skill building materials. The role of the student tutors is to provide the remedial reading student with instruction based on specific skill needs.

One gap, this writer noticed generally in the literature on peer tutoring, is studies on faculty attitudes and faculty acceptance of this strategy.

Student Faculty Interactions and Learning Outcomes

Is there a characteristic teaching style of Community College faculty? Wilson et al (1975) on the basis of their study of College faculty find that in comparison with senior institution faculty, that community college use more detailed lecture notes, that they are more willing to individualize their teaching, they do not feel that class attendance should be optional and they frequently describe instructional objectives at the beginning of each class session. Wilson et al (1975, p. 21) writes: "Community College faculty members are distinguished by their somewhat more student centered approach".

On the other hand, Roberts (1975) studied community college faculty in terms of their personality. To the question: "As an instructor, what do you think students look for when they enter a class for the first time?" Roberts found that instructor personality ranked number one. Futhermore, that community college faculty are more intuitive in their personality while entering students, are more sensing in their personality. Roberts (1975, pp. 6-7) writes: "findings indicate clearly that Sensing (S) and Judging (J) types prefer to teach and learn in an orderly, systematic manner, using primarily their five senses, and they respond best to educational media which play upon these senses. They respond positively to varied multi-media approaches of instruction but they don't respond well to the written or the spoken word (e.g. textbooks and lectures). The intuitive (N), perceptive (P) types, on the other hand, prefer to teach and learn in a flexible, unstructured manner. They are more apt to respond positively to the written and spoken word-providing that they stimulate interset and iconic imagery."

If Roberts findings are supported in other studies, then it is important that faculty have training in the type of interactions they have with students. Johnson and Schmedemann (1976), with 25 instructors from 11 different community colleges and 13 different disciplines, provided training in Flanders Interaction

Analysis, microteaching and skills in asking questions. Evaluations collected throughout the programs indicate that the training received by the participants contributed to changes in their attitudes and behavior related to teaching effectiveness.

One issue, that an instructor must confront on the ussue of student teacher interaction, is whether or not he/she should disclose his/her beliefs, and if so, to what extent. Kuiper (1975) developed a questionaire and administered it to four Interpersonal Communication classes and one English class, at Fresno City College. Results of the survey indicated that the students saw their most effective teachers as being self-disclosing. Also, they prefered teachers to self-disclosure and to a lesser extent, advocate a position. An analysis of the responses by age group revealed that while both students under 25 and students over 25 favored teacher self-disclosure, the older group did so more strongly.

In terms of the issue of learning and enjoyment, Bers (1975) surveyed students on how they liked to learn and how they believed they learned best. Results indicated that although only two percent indicated that they learned from and enjoyed lectures, on a pre-test, she found on a post-test that lectures were ranked as the most effective way of learning, but still ranked third on methods enjoyed. Small group discussions were ranked most enjoyable and efficacious way to learn on the pre-test, while on the post-test such discussions ranked last. This study is important since it suggests that early student perceptions of learning and enjoyment may not effectively foretell how successful a particular teaching technique will be. Also, this study suggests that the differences between student and instructor preferences for learning methods (Raimes, 1975; Gibbs, 1975) may not be that crucial.

However, one needs to be award of a recent study by Powell (1975). In a study conducted at William Rainey Harper College he found in two studies correlations of .73 and .79 between the grades teachers gave students and the ratings students gave teachers. Powell (1975) notes that in 28 studies done at colleges

since 1954, everyone found some correlation between grades and ratings.

Lastly, a set of studies by Mink and Watts (1973), Roueche and Mink (1975), and Rouech (n.d.) illustrate, in this writer's opinion community college research on instruction at its best. These studies have attempted to shift student orientation from external locus of control (i.e. chance or other powerful individuals determine events) to internal locus of control (i.e. there is a direct relationship between one's own behavior and its outcome). The results show that this can be done. The individualized instructional techniques are coupled with "reality-based" (R. Glasser) counseling strategies. These studies have found a high persistence rate, higher G.P.A.'s and a shift to internal locus of control.

Implications

The review of the literature on instruction in the community college indicates that there is much ongoing research. More importantly much of the research seems to indicate that individualized instruction, media approaches, educational television, computor assisted instruction, and peer tutoring have positive impacts. However, one finds from scanning titles- whether in ERIC or journals- a relatively small percentage of articles dealing with instruction and many of these lack empirical data. Also, people who conduct instructional research at one institution seem to be unaware or what others are doing. Some how better communication is needed.

Implication One: Change is developmental and multi-dimensional. It does not occur uniformly:

One finds as the foremost concept in the evaluation of instruction is the notion of change. However, researchers seem not to have really explored the meaning of this concept sufficiently. To this writer, change implies both alteration and development. It seems that alteration has often been interpreted in terms of a statistically significant difference obtained by research methods. Though statistical methods are helpful in improving the quality of decision

making, they cannot, in this writers view, substitute for the logic of good questions or common sense. The results of comprehensive surveys of research studies in education too often has led to the amassing of impressive arrays of conflicting outcomes.

Change too often suggests abrupt alteration. Moreover by looking at changes in dependent test scores one is often assuming that a treatment has affected all students. To this writer, change is developmental. It is a consequence of three interacting factors:

1. The instructor.
2. The instructional arrangement.
3. The past learnings and personality of the student.

To this writer, change does not occur uniformly. This means that one cannot expect a uniform instructional method to influence all students in the same way. This is important because instructors have behaved in their teaching and research as if "systems approach", "lecture", "group discussion", "programmed instruction", "audio-tutorial" would have uniformly beneficial outcomes on all students. This kind of reasoning is similar to throwing mud against a wall and hoping it will all stick!

Implication Two: To aid instructors and administrators in making decisions about instructional approaches a basic set of categories is needed.

To get faculty to agree on a basic set of categories is difficult or almost impossible. However, the effort needs to be made and kept being made. To make judgements and comparisons there has to be some similarities across studies or one is comparing "apples" with "oranges". To get agreement on categories is difficult since "instructors" consider themselves experts.

What basic categories should exist? To this writer, a basic set of categories would consider both specific context and student characteristics, if one wants to be able, if ever, to prescribe optimal instruction.

The basic categories suggested include: subject, demographics of class, numbers of class meetings per week and length, time of day class meets, cognitive level of students, self-concept of students, number of courses students are taking, number of hours the student is employed, type of evaluation (exams), number of students who drop, cost, and the textbook used. The reason, for including the textbook, is that most studies on the impact of instruction, usually have a common text in all the courses, and in order to be fair, most examination questions are based on that book. Therefore, often what is being measured is what the student learned from the text and perhaps the "no difference" results of many studies reflect the powerful impact of the text, which is acting as the source of course objectives.

Implication Three: A basic instructional model is needed.

This proposal may seem idealistic, but work toward this is needed. The process of moving toward this ideal would be helpful. This writer puts forth the following model:

1. Objectives are clearly presented.
2. The content is presented in relatively small information task unit.
3. The information task units are arranged in sequence to maintain high continuity.
4. Each information task unit contains supports, to predispose success for dealing with the information presented.
5. Feedback of performance frequently occrs.
6. The rate of pacing is set by the student within limits, especially in a new skill area.
7. Review tests are presented that make clear the specific behaviors necessary to meet the objectives given at the beginning of the information task unit.

In terms of objectives or competencies, the following should be included:

1. Recall of basic concepts and facts.
2. Application.
3. Analysis.
4. Creativity.

Implication Four: At the community college a diversity of instructioanl approaches must exist.

This implication follows from the fact that at the community college a diversity of students exist in terms of their abilities, backgrounds, educational goals, and attitudes toward learning. Also, diversity of instructional approaches should exist so that the student will be able to learn and find out that he/she can learn under different conditions. Realistically, the paradox is that students need to learn how to learn from less than ideal instructors and settings. This would allow students to profit from all sorts of instructors, if only in some cases to expand their understanding of the range of adults to be found in any aspect of life.

References

Adams, S. et al Educational Services Master Plan Project. Phase I: Information Oakland, Calif.: Peralta Community College System, 1975. (ED 105 915)

Babski, C. "Does Students' Expectations of Teachers Affect Students' Evaluation of Teachers.' (n.d.) (ED 118 206)

Barghin, J. A. "Individualized Instruction-A Case Study of One Successful Program." 1975. (ED 130 724)

Beets, C. "Auto-Tutorial Mastery Learning in Biology," cited in Proceedings: Annual Illinois Junior College Conference. Springfield Illinois Junior College Board, 1972.

Belzer, T. J. "A Comparative Study of a Traditional Lecture Method and a Group-Paced, Multimedia, Non-Lecture Method Used in Teaching College Biology." 1976. (ED 133 026)

Bers, T. H. "The Relationship Between Learning and Enjoyment: A Study of Student Perceptions of Teaching Techniques." 1975 (ED 119 764)

Bloom, B. S. "Learning for Mastery." Evaluation Comment, 1968, 1(2), pp 1-12.

Blough, D. K. "A Student-Oriented Individualized Learning Program for Calculus at the Community College." (n.d.) (ED 116 745)

Brick, M. Forum and Focus for the Junior College Movement. New York: Bureau of Publications, Teachers College, Columbia University, 1964.

Brubacher, J. S. and Rudy, W. Higher Education in Transition. New York: Harper and Row, 1976, (3rd ed.)

Burger, V. K. "Design, Producation, Evaluation, and Revision of an Individualized Instruction-Evaluation Third Quarter General Chemistry Course." 1975. (ED 134 264)

Carman, R. A. "A Long-Term Study of the Efforts of Tutoring in Developmental Mathematics." (n.d.) (ED 112 983)

Chicago City Colleges. "Compensation for TV College Studio Teaching and Supporting TV Instruction, Appendix B." 1974 (ED 901 028)

Ciaburri, D. F. "The Effect of a Student-Centered Teaching Method of Teaching Drama Versus a Traditional Method of Teaching Drama as a Literary Form in the Acquisition of Cognitive Information by Community College Students." 1975. (ED 132 998)

Clark, B. R. The Open Door College New York: McGraw-Hill, 1960.

Coast Community College District. "KOCE-TV Needs-Assessment Surveys: Target Population TV Discussion Panels." 1974A (ED 088 542)

Coast Community College District. "KOCE-TV Needs-Assessment Surveys: Audience Analysis Telephone Survey." 1974B (ED 991 015)

Coast Community College District. "KOCE-TV Needs Assessment Surveys: Communications Pattern Survey." 1974C. (ED 092 191)

Coast Community College District. "KOCE-TV Needs Assessment Surveys: Target Population Reactor Groups." 1974D (ED 093 403)

-----"Opening Fall Enrollments in 1974, 1975, and 1976." Chronicale of Higher Education, 1977, Feb. 22, p.6.

-----"The Peer Teaching Program of Community College Studies." 1972. (ED 060 837)

Coast Community College District. "KOCE-TV Telecourse Evaluation. Student Reaction to Television Courses Fall Semester 1973-1974. 1974E. (ED 094 840)

Cross, K. P. "1970 to 1974: Years of Change in Community Colleges." Findings, 1975, 11(2), pp. 5-8.

Cross, K. P. Accent on Learning San Francisco: Jossey-Bass, 1976.

Cubert, S. and Masi, A. "Computer Assisted Instruction at Rhode Island Junior College." Community College Social Science Quarterly, 1975, 5(4-6), pp. 134-138.

Decker, D. F. "A Comparison of Criterion-Referenced and Norm-Referenced Approaches to the Teaching of Physical Science." 1974. (ED 100 438)

Desmarais, A. et al "Computer Assissted Instruction: An Alternative Approach to Learning for Bristol Community College Students." 1974. (ED 121 411)

Dubin, R. and Taveggia, T. C. The Teaching-Learning Paradox. Eugene, Oregon: University of Oregon Press, 1968.

Elliot, J. M. and Tuckman, B. W. "Differentiated Outcomes Resulting from Individualized Instruction at a Two-Year College." Community-Junior College Research Quarterly, 1976, 1, pp 1-12.

Frazer, G. W. "A Followup Report on the Attitudes and Preferences of Those Students Enrolled in the Televised Course, Child Psychology, at Waubonsee Community College, Sugar Grove, Illinois." 1975 (ED 111 444)

Gibbs, R. R. "An Assessment and Analysis of Selected Learning Modes Preferred by Students and Offered by Teachers." 1975 (ED 112 970)

Hammons, J. O. "Editors Notes" cited in New Directions for Community Colleges, 1977, 17 (Spring), pp. vii-xv, J.O. Hammons (ed.) San Francisco: Jossey-Bass.

Henderson, M. A. "Individualized Reading. Instruction in Two-Year Colleges." Journal of Reading, 1976, 19 (6), pp.464-471.

Higgins, F. and Laplante, D. "Self-Pace Mastery Learning as Applied to Introductory Sociology." 1974. (ED 092 182)

Hill, M. and Morrison, J. "The Relationship of Selected Community College Faculty Attitudes, Socialization Experiences, and Reference Group Identities." Community Junior College, 1976, 1 (1), pp. 25-50.

Hinrichsen, K. A. "Evaluative Comparison of Programmed System of Instruction and Traditional Lecture Approaches in a Basic Administration of Justice Class at Cerritos College." 1975. (ED 114 142)

Houston, C. A. and Ryg, C. J. "An Evaluation of Instructional Radio Courses at Virginia Western Community College." 1975. (ED 11 454)

"Instructional Television Progress Report, 1971-1974." 1974. (ED 112 966)

Jencks, C. and Riesman, D. The Academic Revolution. Garden City: Doubleday, 1968.

Johnson, B. L. Islands of Innovation. Los Angeles: School of Education, University of California, 1964.

Johnson, G. R. and Schmedemann, L. "Improving Junior and Community College Instruction." 1975 (ED 112 964)

Jones, E. L. et al Mastery Learning: A Strategy for Academic Success in a Community College Topical Paper No. 53 Los Angeles: ERIC Clearinghouse for Junior Colleges, 1975. (ED 100 454)

Keller, F. S. "Goodbye, Teacher..." Journal of Applied Behavior Analysis, 1968, 1, pp. 79-89.

Kelly, J. T. and Anadam, K. "Response System with Variable Prescriptions (RSVP); A Faculty-Computer Partnership for Enhancement of Individualized Instruction." 1976 (ED 121 387)

Kindschi, D. "Mastery Learning Model: A Pilot Study." Community College Frontiers, 1974, 3 (1), pp. 16-20.

Kuiper, H. P. "Teacher Self-Disclosure and Advocay, Compared to Neutrality, Their Effect on Learning, with Special Reference to Religious Studies." 1975 (ED 111 463)

Los Angeles Community College District. "A Plan for Development of an Educational Telephone Network (ETN) to Extend Access to Educational Programs.

Magidson, E. M. "Developing an Individualized Learning Course for an Urban Community College." 1975 (ED 110 131)

Maloney, J. D. "A System of Individualized Reading Diagnosis and Instruction on the Community College Level." 1976. (ED 121 407)

Mayhew, L. B. The Carnegie Commission on Higher Education. San Francisco: Jossey-Bass, 1973.

McKeachie, W. J. "Research on College Teaching" Memo to the Faculty, 1971, 44, May.

Medsker, L. L. and Tillery, D. D. Breaking the Access Barriers. New York: McGraw-Hill, 1971.

Mincks, S. "A Writing Teacher Looks at Individualization." 1976. (ED 129 376)

Mink, O. G. and Watts, G. E. "Reality Therapy and Personalized Instruction. A Success Story." 1973 (ED 115 323)

Parsons, M. H. "Meeting the Challenge of Change." 1976. (ED 121 389)

Powell, R. "Grading Style and Student Evaluation of Faculty." 1975 (ED 118 165)

Raines, R. H. "A Comparison of Grade Achievement of Students Using a Programmed Mathematics Text Versus Students Using a Traditional Mathematics Text." 1974. (ED 133 034)

Reimanis, G. "Student Attrition and Program Effectiveness." 1973. (ED 132 988)

Rice, J. P. "Differing Views of Institutional Aims Among College Administrators, Teachers, and Students." California Journal of Educational Research, 1961, 12(A), pp. 165-172.

Roberts, D. Y. "Personalizing Learning Processes." 1975. (ED 115 322)

Robin, A. L. "Behavioral Instruction in the College Classroom." Review of Educational Research, 1976, 46 (3), pp. 313-354.

Ross, S. F. "A Study to Determine the Effect of Peer Tutoring on the Reading Efficiency and Self Concept of Disadvantage Community College Freshmen: Final Report." 1972. (ED 081 415)

Roueche, J. E. "Can Mastery Learning be Humane? The Case for Performance Based Instruction." Community College Review, 1975, 3(1), pp. 14-21. (June) (A)

Roueche, J. E. and Mink, O. "Toward Personhood Development in the Community College." 1975 (ED 114 137) (B)

Roueche, J. E. et al "Effects of Individualized Instruct on Control Expectancy: A Field Test." (ED 114 138)

Schaumberg, G. F. "An Evaluation of A Self-Paced Approach to Elementary Chemistry Instruction." 1973. (ED 081 409)

Segalla, A. "Televised Versus In-Class Instruction: What the Literature Implies." 1976. (ED 125 695)

Sharples, D. K. et al "Self-Paced Learning in Civil Engineering Technology: An Approach to Mastery." 1976A (ED 121 365)

Sharples, D. K. et al "Individually-Paced Learning in Civil Engineering Technology: An Approach to Mastery." 1976B (ED 131 870)

Sheldon, M. S. and Miller, E. D. "Behavioral Objectives and Mastery Learning Applied to Two Areas of Junior College Instruction." 1973 (ED 082 730)

Storr, R. J. Harper's University. Chicago: University of Chicago: University of Chicago Press, 1966.

Taber, M. R. "A Comparison of Using Individualized Instruction and Conventional Lecture Techniques in the Lecture Section of Electric Circuits 540-125. 1974A. (ED 104 511)

Taber, M. R. "A Comparison of Using Individualized Instruction and Conventional Lecture Techniques in the Lecture Section of Electric Circuits 540-126." 1974B (ED 104 512)

Travers, R. M. W. Essentials of Learning. New York: Macmillan, 1977. (4th ed.)

Woodbury, R. et al "An Evaluation of Individualized Instruction Units Using the Bayesian Theorem in Two-Year Technical Institutes Designated as Developing Institutions." 1976. (ED 135 439)

Wattenberg, J. L. and Cage, B. H. More Money for More Opportunity. San Francisco: Jossey-Bass, 1974.

Whitehurst, M. and Farnell, M. J. "Human Development Instruction in the Community College: A Summary Report of a Personal Growth Course." (n.d.) (ED 115 355)

Wilson, R. C. et al College Professors and Their Impact on Students. New York: John Wiley, 1975.

Zimmer, A. L. (Ed.) Community College Users' Report, Fall 1975. Urban: Illinois University, Computer-Based Education Lab, 1976. (ED 122 901)

Zwerling, L. S. Second Best. New York: McGraw-Hill, 1976.

UNIVERSITY OF CALIF.
LOS ANGELES

MAR 31 1978

CLEARINGHOUSE FOR
JUNIOR COLLEGES